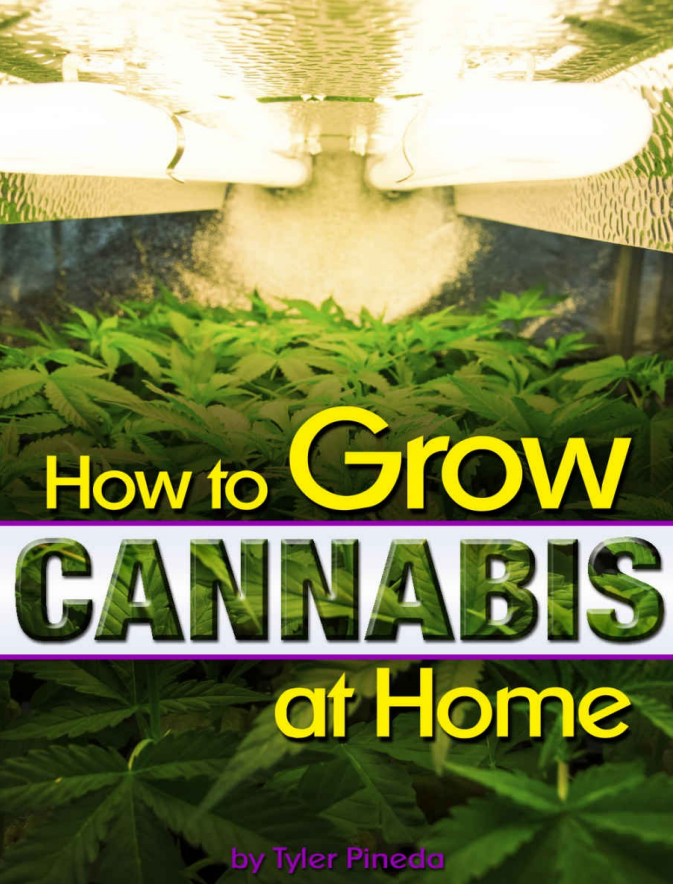




How to **Grow** **CANNABIS** at Home

by Tyler Pineda

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How to Grow Cannabis at Home

*A Pot-Lover's Guide
to Growing
Cannabis Indoors
for Self-
Consumption*

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Introduction

With multiple US states adopting more progressive policies on marijuana for both medicinal and recreational use, the interest in marijuana cultivation has grown faster than the plants can be grown themselves. As a result, many people are starting to grow their own cannabis plants at home for self-consumption.

The easiest and most popular way to cultivate marijuana is by growing it indoors. This method is advantageous in

that you're not subject to the whim of the seasons, but can assert full control over the growing environment. It's also quite personally rewarding, as marijuana makes for a very interesting and unique houseplant.

Even if you're starting from scratch and haven't had any previous experience growing marijuana, the growing process is something that's imminently teachable, and this step-by-step guide is designed to get you off to a great start.

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Step 1: Selecting Location, Strands, Soil, and Containers

The first decision you need to consider is where you want to set up your growing area. It's important that you select a space that's either already enclosed or can be enclosed, so you will be able to fully control the environment. Spare bedrooms can work, so long as you're prepared to tarp over the windows. Ideally, you'd select a room that doesn't have any windows or some enclave in your basement or attic. A

closet can also work, especially if you're just going to be growing a few plants. You also have the option to purchase pre-fabricated grow tents that you can place in virtually any open space in your house.

Seeds are available for purchase in shops, where marijuana is legal or decriminalized, but one of the most popular ways to acquire seeds is online. There are several companies around the world that will ship marijuana seeds right to your door.

In addition to selecting a strain that's going to be easy for you to grow, you

should also consider the type of medical/recreational effects that you desire. The two big bucket categories of marijuana strains are sativa and indica. Sativas have a more uplifting, stimulating and cerebral effect, while indicas deliver more of a relaxed body-based sensation.

When choosing a strain, if you're brand new to marijuana cultivations, then you may want to choose an auto-flowering strain that doesn't require complex adjustments of light to flower. Choosing a strain that requires simpler maintenance does not mean that your end product will be of any less quality or potency.

Certain strains, both indicas and sativas, are hardier than others and will thrive under a broader variety of conditions. Choosing one of these strains will leave you with more room for error. A few popular beginner strains include:

8 Ball Kush

Great for insomnia and muscular pain, 8 Ball Kush is an Indica dominant strain that's highly potent and has an earthy taste reminiscent of high quality hashish.

Afghan Kush

Great for insomnia, Afghan Kush is known for its thick and pungent smell,

reminiscent of black hashish with undertones of spice and incense. The plant packs a powerful punch and is not recommended for novice smokers.

American Dream

A reliever of stress and muscular pain, American Dream, though Indica dominant, has the uplifting cerebral characteristics of a Sativa. It's also easy to grow and a good choice for beginners.

Selecting a Growing Medium

A growing “medium” is really just a fancy way of describing where your plant will grow, such as in soil,

hydroponics, or a soilless mix. The two key functions of a growing medium are to supply water and to give oxygen to the roots of the plants.

Basic soil is the least expensive and most straight-forward option available. Though the selection of soil is important, there's little room for error in the soil vs. hydroponic and other growing mediums, so this option is a good fit for beginners.

The drawback to growing in soil is that, during the course of the plant's growth it will likely need to be repotted at some point, which is stressful to the plant and

can negatively impact its overall growth.

Choose a soil that has a pH in the 6.5 to 7 range. You should also be scrupulous about the texture of your soil. To test the suitability of soil for marijuana, you need to make sure that it can both absorb water but not be too clumpy. Pick up a handful of moist (not sodden) soil and let it drain through your hands. The soil should not clump but should gently separate. When you clench your fist around it, it should feel like a sponge.

If your soil is not at the proper pH (use color-coded litmus paper to determine the pH of your soil), then you can adjust

it by adding dolomite lime to make it less acidic. Add 1 cup of dolomite lime for every $\frac{1}{4}$ liter of soil and your pH should drift back to the 6.5 to 7 range. If your soil is not acidic enough (higher than the 6.5 pH range), then add coffee grounds or citrus peelings to raise the acidity. When adding these amendments to your soil, always do so when the soil is dry.

Other soil amendments such as perlite and vermiculate can be used to help your soil absorb and retain more nutrients and water. Perlite is pH neutral, so you won't need to recheck your pH after adding it. You should however wear a mask when mixing perlite into your soil,

as it can cause damage to your lungs if inhaled. Vermiculite is crushed volcanic rock that adds a little more density to very fine soil. The pH of vermiculite ranges from 6 to 9.5, so be sure to re-measure pH and adjust after adding.

Containers

Once your soil is prepared, you'll need to put it in a container and then plant your seeds. Containers should be sterilized, especially if they've previously housed other plants.

The selection of the container size is very important, as it will affect the

plant's growth and size. Select two containers for each type of plant. The sizes of the containers will depend on the strain you've selected and how big it gets. The first container will be for the plant's initial growth phases, and the second will be for its latter growth phases. You should avoid having to repot the plant any more than one time. As mentioned previously, repotting causes stress to the plant and it will temporarily slow down or stop growing.

For marijuana, generally the first container is going to be a clay or plastic vessel with a diameter no greater than six inches. When transplanting the plant, prepare the larger (second) vessel with

soil. Then dig out a section of soil that will make room for the first pot's soil and the plant. Pick up the plant, pot and all, and bring it to a hard edged surface like a sink or counter. Turn the potted plant upside down and tap its rim sharply on the hard surface. You want the soil to stay intact and for the root ball to remain secured firmly within the soil. The plant—soil and all—will fall out, and you'll then bring it to its new home in the larger pot.

If you'd like to spare your plant the trauma of repotting, then invest in a Jiffy-Pot. Jiffy-Pots provide the initially required small pot space in the form of a bucket shaped container made of

compressed peat moss. The marijuana plant, inside the Jiffy-Pot, is placed in a larger pot right off the bat. As the plant grows, the peat moss decomposes and the marijuana's roots are able to stretch and expand beyond the wall of the Jiffy-Pot into the larger container.

The main, overarching rule in the process of potting and repotting is to avoid "root binding" at all costs, meaning that the roots of the plant must always be able to expand when and where they want to. Even a short period of restrained roots can permanently compromise the quality of the final product. It only takes about two weeks for the small plants to be ready for

transport. Plan ahead and have your secondary containers and soil ready for the moves.

Step 2: Getting the Lighting Just Right

Indoor growers of marijuana must artificially emulate the qualities of the sun by using grow lights of appropriate heat and brightness. These light qualities are measured in Kelvins and Lumens respectively. Other important light metrics include wattage and brilliance. Wattage is a measurement of the surface area that your lights will cover. A 300 watt bulb is going to cover a larger range of space than will a 150 watt bulb.

The more plants you have, and the more they're spread out, the more wattage you'll require. Brilliance is an indication of the light's acuity and sharpness. If the plant is closer to the source (the light) then it's experiencing the light in high brilliance. If it's further away, then it's experiencing the light in low brilliance. Brilliance that's too high will burn and damage the plant, while brilliance that's too low will leave the plant stretching and bent towards the light and it will be weaker overall.

The brightness (Lumens) and heat (Kelvin) metrics are of particular importance to the various phases of the growth cycle. Brightness is essentially

the amount of total visible light. Warmth is described using a color temperature which corresponds to a certain measurement in Kelvins. For example, during the marijuana plants first stage of growth—the vegetative growth stage—the optimal bulb is going to emit light from the blue end of the heat spectrum, which is emulative of the midday summer sun. The appropriate light is 6500k (Kelvins).

When the plant is flowering, the light will need to be similar to the light an outdoor plant would receive during autumn months. This type of light would be more “red” on the heat spectrum and would measure in at around 2700k.

Types of Growing Lights

There are plenty of options to choose from when it comes to lighting, some solutions are cheaper, some more versatile, and some great all around. Here are a few of the lighting options you may encounter:

HID: High Intensity Discharge lamps are the most commonly used lights for indoor growing. This highly efficient lighting technology comes in a variety of forms including Metal Halide (MH) and High Pressure Sodium (HPS) and can meet the needs of the plant's vegetative

and flowering growth stages.

For vegetative growth, the Metal Halide HID 6500k lamp is the best source for indoor growers. There's an impressive range of Metal Halide wattages ranging from 175 to 1100. The standard wattage preferred by most indoor growers is 400-600 watts.

The HPS (High Pressure Sodium) HID lamp is ideal for the flowering stage, as it has an autumn light spectrum color of 2700k. The HPS lights also come in a variety of wattages to suit the expanse of your growing space, with the 600 watt version being the most popular.

The up-front costs of the lights in the HID family is reasonable (\$84-\$120 for the MH lamp and \$25-\$40 for the HPS) but the ongoing power bills will take their toll on your pocket book so be prepared. The HID lamps also have a shorter lifespan of about 10,000 hours.

If you use HID systems, you should also invest in a ballast mechanism. A ballast helps lights operate more efficiently and safely by alternating the intensity of the current being used by the bulb. Many growers consider ballasts a must-have for safety reasons as they reduce the risk of fires. They do get hot during use, reaching temperatures from 90 to 150

degrees Fahrenheit (F) or 32 to 66 Celsius (C), so keep them away from all flammable materials.

Fluorescent Tubes: A very common and readily available option, fluorescent tubes are ok to use during the vegetation stage, but should not be used during flowering unless you're ok with a very poor yield.

Fluorescent tubes have a relatively low running cost and come in a variety of different color spectrums, but their rapidly degrading brilliance and unsuitability for use during the flowering stage leaves their utility limited.

CFL: Compact florescent lights (CFLs) are smaller than fluorescent tubes and chock full of power. They come in the daylight color (6500k) and the warm/soft autumn variety (2700K). CFLs are best used when suspended around the sides of the plans. They work well in smaller growing operations.

LED Grow Lights: Light Emitting Diode (LED) lighting systems will last much longer than your average fluorescent tubes. This type of lighting system is also efficient to run. Because they generate limited heat, you can grow your plants in very close proximity to the light without worrying about the plants getting

damaged. The downside is that LED grow lighting is expensive. You're looking at about a thousand dollars for coverage equivalent to 400 watts. They also fail to produce a fantastic end product. In fact, it's hard for an LED set-up to compete with the traditional HID set-up when it comes to the quality of the buds yielded.

Lighting Add-ons

When you begin shopping for lighting equipment, you'll soon notice a multitude of add-on options available to help you refine and optimize your lighting. Here are some of the add-on

lighting gadgets for you to consider:

Reflector Hoods: These add-ons can lead to bigger yields by increasing the amount of coverage and brilliance produced by your lights. The downside is that the reflected light and the hood itself will generate more heat which can cause your plants to suffer heat burn if you don't carefully monitor their position. You can minimize this risk by selecting an open ended or aluminum hood, both of which retain less heat. You can also bring a fan into your grow space and point it at the hood, which will lead to better air circulation and cooling around the bulbs.

Reflective Materials: There are several materials available to growers who wish to increase their yield by maximizing the reflection of light in their grow space, ensuring that light reaches the lower part of the plant and boosts its growth. Mylar is probably the most common reflective aid. Lay it flat against the wall and all of your grow space's lighting will be reflected. Another option is to paint your grow room with flat white paint. This color does not absorb light and will thus reflect it all back into the room.

Light Cycles

Marijuana plants need different amounts of light throughout their lifetimes. If you do not give your plant the right type of light when it needs it, you may produce a hermaphrodite plant that will yield only small, weak buds.

When your plants are germinated seeds you'll get your best results by keeping the lights on for 24 hours. Seedlings are best served by 16 to 24 hours of light. The standard light cycle for marijuana plants in the vegetative state is 18 hours of 6500k light (6 hours of darkness). The standard light cycle for the flowering state is 12 hours of 2700k light (12 hours of darkness).

When it comes to determining the proper length for the vegetative and flowering phases of the marijuana plant, indoor growers are able to drive this process to a large extent by using the light cycle. There's no exact amount of time when a plant that's been in the vegetative state is formally ready to go into flowering. The grower uses his or her own preference to make this determination, usually based on the size of the plant. When the plant grows to a size that the grower is pleased with, he will change the light cycle to initiate the (12-hour light, 12-hour dark) flowering phase. Usually, after two weeks of this light cycle, the plant will begin to produce useable buds.

In nature, the light cycle phases are determined by the availability of sunlight. The plants grow in the summer and flower in the fall. For best results on your indoor grow, give your plants adequate time to grow before changing over to the flowering light cycle.

Other light cycles can be used under special circumstances. For example, if you're raising clones, then you should provide 18 to 24 hours of 2700k light.

Step 3: Monitoring Food, Water and Temperature

Here we'll discuss your plants' food requirements, as well as their water and temperature needs.

Feeding: If you used good soil in the beginning, the nutrients therein will nurture your plant for about three weeks of growth. After that time, it's time to add fertilizer. You must be careful when selecting the type and quantity of fertilizers, as some varieties will burn a plant's roots if added in quantities that

are too high.

Fertilizer should be added gradually, so that the plant has a steadily increasing concentration of fertilizer in its soil. Begin with a highly diluted solution and gradually increase the concentration of the fertilizer solution over time.

Many fertilizers on the commercial market are known for being very friendly to marijuana. Rapid-Gro is available most anywhere in the US and is used by countless growers. Eco-Grow is another popular choice especially well-suited to marijuana, because it prevents the soil from becoming too acidic. The general

concept is that your fertilizer, when broken down, is going to produce salts which will make your soil more acidic. You can avoid salt accumulation and adequately feed your plants by using the “leaf feeding” method. Use worm water as a solvent for your fertilizer and put your solution in a spray can, then spray the solution directly onto the leaves of the plant. You can use the leaf-feeding method in conjunction with the standard soil feeding. Just be very conservative with your dosage level to avoid overfeeding and excess salt accumulation.

Marijuana tends to consume all the food you're willing to give it, but this doesn't

mean you should keep feeding it. During the vegetation (growth) stage, feed the plant every two to three days. When the plant's foliage growth begins to slow down, then you should also cut back on the fertilizer. Feeding the plant encourages foliage growth and decreases the amount of resin in the buds, so stop feeding your plants a week or so before you harvest them.

Watering: Another very delicate and important aspect of the marijuana growing process is the watering of the plant. Most new growers have two major concerns on this front: what type of water is acceptable to use and how often should I water the plant.

Regarding the type of water you should use, tap water is generally ok, so long as it's at a neutral pH, has less than 140 ppm (parts per million) of dissolved solids, and is at room temperature. Some cities have high chlorine content in the tap water, which may also adversely affect your plants. To get rid of the chlorine in the water, let it sit out in the open at room temperature for 24 hours. The chlorine will evaporate, and you'll always have water ready at the proper temperature.

The reason water is so crucial to marijuana, and to plants in general, is that it's used to deliver critical nutrients.

Proper pH levels, along with proper ppm of dissolved solids are what allow nutrients to be delivered. The pH levels should read anywhere between 5.8 and 6.8. This is the pH level at which the nutrients carried by water to the plant will be effective. When the pH is not within these levels, the plant will not be able to properly absorb the nutrients, and it will begin to starve. The water you use should have no more than 140ppm of dissolved solids. Any more than this and critical nutrients may again be unable to get where they need to go. If your tap water cannot meet the pH and dissolved solid thresholds, then you should consider using bottled water or other water sources.

Another water-related consideration is whether your tap water is too high in calcium (“Hard water”) or too low (“Soft water”). If your water is too soft, then you can add calcium to it or ensure in other ways that the soil has a good supply of calcium in it. If you’re water is too hard, nutrients may be locked out, so use another source.

Distilled water is a good alternative source. Some growers even think that distilled water speeds up the plant’s growth. You can also purify your water by boiling it. If you have decided to go with bottled water, then don’t just assume that it’s perfectly clean and pure

just because it's bottled. Check that the bottles are marked with R.O. (Reverse Osmosis). If the water has been carbon filtered, then do not use it. Carbon filtering does nothing to remove impurities and metals. Reverse osmosis is a sound option, because the reverse osmosis process removes all solids from water.

The amount of water you need to use when watering is determined by several factors such as the size of the plant, the type of medium you're using, and the size of the container you're using. It's fairly easy to discern if you're over-watering or under-watering your plant. If the soil is soggy and the leaves begin to

curl down and turn yellow but are still stiff, then you're overwatering. Overwatering can cut off the oxygen supply to the roots. It will lead to slow growth and a higher risk of fungal attacks. One of the reasons your plant may be getting too much water is poor drainage. If the water builds up in the plant container and does not naturally disperse, then your plant is at risk of suffocating. Drainage problems can be avoided by making sure that the soil (or any other medium you're using) is capable of holding a lot of oxygen. You can also improve drainage capability by adding perlite to your soil.

Signs of under-watering include: the

plant stops growing or doesn't grow as quickly, the leaves go limp and begin to turn yellow, and the soil is dry. When your plant is under watered, the roots begin to die off and growth is stunted. You will find that the larger your plant gets, the more water it will require. Sometimes, even when you are providing adequate water the plant will still show signs of under-watering. This may be due to a pocket of dry soil that the water is unable to reach. This problem usually occurs immediately after the plant has been repotted. It's a good idea to water the plant twice as often immediately after it's repotted.

The water you use should be close to 70

F (or 21 °C). If the water is too hot or too cold, then it will put your plant in a state of shock. Furthermore, hot water contains more undesired impurities that your plant should stay clear of.

The best time to water your plant is right before you turn the lights on (at the beginning of the light cycle). Think of it as the plant's wake-up call or breakfast. It will be doing a lot of growing in the hours immediately following its first burst of light. Since your plant will utilize the water right away, watering at the beginning of the light cycle also reduces the risk of drowning.

Some growers will spray on a light mist at the beginning of the light cycle to help keep pests at bay. This is fine for the vegetation stage, but should not be done during the flowering stage, as mist directly placed on the budding flowers will encourage mold, which is really bad news.

Temperature: In the wild, marijuana is found in places such as the Mediterranean, Southern California, and the tropics. In order for it to grow to its full potential in an indoor growing environment, a comparable climate must be available. A marijuana crop can be completely destroyed if the temperature is too hot or too cold. For this reason it's

important to measure the temperature of your grow room. You can use fans to cool down the room and circulate fresh air.

The optimal temperatures to maintain depend on the strain and the lifecycle stage of the plant. Generally, for seedlings, 68 to 77 F (20 to 25 C) is ideal for when the lights are on. Older plants can withstand temperatures as high as 82 F (28 C). When the lights are off, the temperature should be between 62 and 72 F (17 to 22 C). Marijuana is not a desert plant, and the variance between nighttime (dark) and daytime (light) temperature should not be too high. Try to keep light and dark

temperatures within 10 degrees (in Fahrenheit—i.e. approximately a range of 5 degrees in Celsius) of one another.

Step 4: Pruning and Controlling Bugs & Odor

Pruning: Pruning is not always necessary for all marijuana plants. Its main function is to encourage more robust growth of the plant and to allow for light to be exposed to parts of the plant that are currently blocked by other parts. If your plant appears exceptionally tall with many growing arms by the three week mark, then it will probably need to be trimmed from time to time.

Prune the plant by cutting at the area

where two branches oppose one another. After you make your cuts you have the option of “rooting the top.” ”Rooting the top” refers to planting the newly cut branch into moist soil and hopefully making another plant out of it If you plan on “rooting the top” then cut the end one more time with a long diagonal cut, so that the new plant will have more of its surface exposed to water. This kind of pruning will create a particular kind of vertical growth called “tops,” which growers love because they produce more resin.

Controlling Bugs: An ounce of prevention is worth a pound of cure. Keep bugs away from your plants by not

taking any other plants into your growing room. Also keep the soil fertilized and make sure your pets stay away from the growing room, as they are prone to transport pests in their fur.

Examine your plants regularly for signs of intruders. Spots, holes in the leaves, and the browning at the tips of the leaves are all signs of unwanted company. In the event your grow room becomes infested with bugs, you'll unfortunately need to resort to insecticide.

One of the most problematic infestations you're likely to encounter is that of spider mites. Spider mites are known to do a

lot of damage to marijuana. They are hard to spot, but evidence of their presence can be found in the form of a web-like substance that they will deposit on the leaves. The leaves may appear as if they have some kind of fungus. Use a magnifying glass to conduct a careful investigation. Kill spider mites with “Fruit and Berry” spray made by Millers or choose from one of the many insecticide products offered by Ortho.

Controlling Odor: Indoor grow areas, unfortunately, have a bad odor. As with many aspects of growing, there’s a niche market to help indoor growers deal with the smell. Carbon filters are probably the most effective way to get rid of the

smell. You attach the filter to your exhaust fan and adjust the room humidity so that it stays under 60%. If the room humidity gets too high, then the moisture will clog the filter.

You can also pick up specialized deodorants such as Ona or Ozium. They work like baking soda, put them in the corner of the room and let them absorb the odors.

Keeping the odor of your indoor grow area under control is important, especially for growers who require a high level of discretion.

Step 5: Ensuring a Good Harvest

Harvesting, this is where all your hard work pays off. The name of the game when harvesting your marijuana is making sure that the end product is mellow, not harsh. It may sound like a lot of hippie gobbledeygook, but one of the characteristic blights of home grown marijuana is a harsh chlorophyll taste that you do not want to experience.

The key to a good harvest is in the curing process. You're going to pull the plant

up by the roots and hang it upside down for 24 hours. Afterwards, you'll put each plant in an open paper grocery bag and let it sit for three to four days. You'll want to keep the plants dry to avoid the accumulation of mold. Mold can ruin an entire harvest, so make sure that you make all efforts to avoid it. If you see mold growing on the harvested plant, then immediately get rid of it, and keep it away from the rest of the plant. One way to detect mold is by smell. If you get an acrid aroma, then you've probably got mold growing. If there's no visible mold at this point, then don't throw away the plant, but instead spread it out on a dry newspaper so that it will dry at a faster rate.

Extract the buds from the dried plant. You can trim them down if you want less leafy and more ergonomic end products. Smoke and enjoy!

Conclusion

One commonly known rule amongst growers is that a new growers should never expect an amazing result their first time out. This book and other sources can provide you with guidelines, but growing in many ways is a touch-and-go, trial-by-error art form just like any other type of gardening.

You'd probably do well to link up with a growing guru to help you set up your first indoor grow. Finding an appropriate party won't be difficult if

you live in a part of the world where cannabis is legal or decriminalized. If you find yourself on your own, then maybe you should start with just one or two of the plants mentioned in Chapter 1 of this book. Good luck and happy growing.

Finally, I'd like to thank you for downloading this eBook! If you enjoyed it or found it helpful, I'd greatly appreciate it if you'd take a moment to leave a review on Amazon. Thank you!